	VIDEO	AUDIO
1		Our nation depends upon accurate and timely environmental data to safeguard our Civil, Economic and military interests against the uncertainties of weather.
2		NPOESS, the National Polar-Orbiting Operational Environmental Satellite System, will play a pivotal role in national weather preparedness for the next 20 years.
3		NPOESS satellites will circle the globe in low earth orbit approximately once every 100 minutes, providing global coverage and monitoring environmental conditions, collecting and disseminating data about the Earth's weather, atmosphere, oceans, land, and near-space environment.
4		The data obtained by the NPOESS constellation will help to reduce the potential loss of human life and property by enabling more efficient disaster planning and response to extreme weather conditions such as hurricanes and floods.
5		Civilians will benefit from the satellite's data in the areas of civil aviation, agriculture and maritime activities.
6		Military users benefit from NPOESS as well, shifting their tactical and strategic weather focus from "coping with or avoiding weather" to exploiting and anticipating atmospheric and space environmental conditions.

7		The NPOESS system will collect very precise earth surface, atmospheric and space environmental measurements from a variety of on-board sensors.
8		This highly precise data will allow scientists and forecasters to monitor and predict weather patterns with greater speed and accuracy than ever before.
9		The NPOESS Integrated Program Office, or IPO, represents an historic coalition of the Civil, Scientific, and Military weather communities, which have come together to shape a single, more affordable system to replace the current, separate military and civil systems used today.
10		Northrop Grumman is working with our team members and the IPO to create a system that will provide accurate and timely data to users worldwide.
11		As prime contractor, Northrop Grumman is responsible for overall system design and development, including acquisition of sensors and assembly and test of the spacecraft.
12		Our team member Raytheon will provide the ground systems, including the data processing segment; the communications, command and control segment; and the field terminal segment software.

13		Ball Aerospace and Technologies, Boeing, ITT Industries, Northrop Grumman Electronic Systems, and Raytheon Santa Barbara Remote Sensing, are responsible for design and development of the four key NPOESS instruments. (Nine other instruments or payloads round out the complete set of NPOESS sensors)
14		Ball is developing OMPS, the Ozone Mapping and Profiler Suite, a sensor that will collect vital ozone information. OMPS data will be used to help determine if synthetic chemicals are affecting the Earth's climate and fulfill international treaty obligations to monitor ozone depletion.
15		At Boeing, work is underway on the Conical Microwave Imager / Sounder—CMIS ("see-miss")—an instrument that collects global microwave radiometry and sounding data to produce microwave imagery and other meteorological and oceanographic data, including ocean surface wind speed and direction.
16		At ITT Industries engineers are working on the first operational use of an interferometer in space as part of the Cross Track Infrared Sounder, CrIS. CrIS has already completed initial performance testing and vibration trials to be certain it can construct vertical profiles of atmospheric temperature, moisture and pressure to make weather forecasts more accurate.
		Northrop Grumman Electronic Systems is

17		currently at work on the Advanced Technology Microwave Sounder, ATMS.
18		ATMS will, in conjunction with CrIS, provide global observations of atmospheric temperature and moisture profiles at high spectral and temporal resolution—a must for accurate and timely weather forecasts.
19		Advanced imaging and radiometric capabilities onboard the NPOESS Satellite will be provided by the Visible/Infrared Imager Radiometer Suite…VIIRS. VIIRS is being developed and tested at Raytheon's Santa Barbara Remote Sensing facilities … here the laboratory prototypes of flight subsystems have demonstrated the integrated sensor system capabilities. Currently, VIIRS flight subsystem test units and integrated assemblies are being built and tested to ensure compliance with all specified and derived requirements.
20		In operation, VIIRS will provide high spectral and spatial resolution imagery for the next generation improvement of global data products, including: hurricane tracking forecasts, fire detection, atmospheric aerosol measurements, sea surface temperature mapping, ocean-color observations, vegetation index mapping, and surface ice and snow mappings.
21		Together, our team members represent decades of experience in providing solutions to challenges with great national significance.

22		For weather data to be useful, it must be accurate and timely. Latency—the time between when weather activity is observed and when it is delivered to users—must be short enough so that appropriate warnings can be made or so that authorities can implement proper emergency or other measures.
23		Military users depend on near-real-time data to enable units to exploit favorable weather conditions rapidly, or to avoid unfavorable ones that could hamper maneuverability.
24		Our team's NPOESS data delivery system cuts latency by a factor of four over current systems—reducing observation to delivery time to just 15 minutes for 75% of NPOESS' collected data products.
25		We achieve this stunning improvement through a Northrop Grumman designed innovative data delivery system called Safety Net™.
26		The Safety Net™ system is a globally distributed grid of 15 low-cost, unmanned ground receptors, tied into existing commercial fiber optic networks.
27		The Safety Net™ system coverage is nearly contiguous as the orbiting spacecraft travel from the field-of-view of one receptor to the next, greatly reducing on-board data storage times.
28		With the Safety Net™ system, 95% of NPOESS data is delivered to the four US-based Environmental Data Processing

		Centrals—the main data processing facilities for weather data—within 28 minutes, much faster than currently operating systems.
29		After download, mission data is sorted and formatted into sensor/spacecraft packets before being moved into the Interface Data Processing Segment, or IDPS.
30		The sheer volume of data produced by the three NPOESS platforms would hobble most data processing architectures.
31		Our team's Environmental Observing System data processing experience led us to design a flexible, parallel processing approach that breaks up incoming data into manageable portions that can be rapidly parallel processed.
32		Designed for speed and flexibility, this multi-processor, switched fabric connectivity system is ideal for the NPOESS IDPS.
33		The system's multiple processors quickly sort the incoming data stream into records that are tailored to specific users' requirements, or are merged to generate fusion products for use by multiple agencies.
34		To ensure 100% data integrity, the IDPS workflow manager autonomously reassigns processing tasks if processor faults occur.

35		Development of the IDPS, at Raytheon, is progressing well. IDPS received the very first IBM delivery of their newest flagship computer, representing the powerful heart of the NPOESS ground data processing system.
36		NPOESS end users range from military units operating from fixed and remote terminals, to scientific and educational institutions—each with their own unique data handling capabilities and requirements.
37		As a result, NPOESS' full data set is broadcast to Earth both in high frequency X-band, as well as a subset transmitted at a lower data rate in L-band, ensuring that respective users receive the data in a form that is accommodated at their sites.
38		Operators manage NPOESS space and ground assets using a complex suite of Command and Control Mission-Management Software at the NPOESS Mission Management Center, MMC. The software development for MMC is complete and final factory acceptance testing is being conducted prior to delivery to the new NOAA Satellite Operations Facility in Suitland, Maryland.
39		The NPOESS Preparatory Project (NPP) is a joint NASA/IPO system risk reduction project. NPP's mission is to demonstrate advanced technologies for atmospheric sounding and imaging, giving continuing observations about global change after our

		current Earth Observing System missions are completed. The NPP spacecraft is being built at Ball Aerospace.
40		Our NPOESS team is building on a legacy of successful earth science satellites, using a fully functional, high-fidelity simulation facility, and employing decades of spacecraft integration experience to deploy a constellation of NPOESS satellites that will help to take weather and environmental science to the next level.
41		Supporting NOAA's long-term environmental monitoring mission, NPOESS will provide data essential to understanding the forces that shape the world's climate, including global climate change.
42		Our team is proud to be a partner in helping The Department of Defense, NOAA, NASA, and the extended user community to develop an environmental space system to ensure the safety of civilians and our men and women in the armed forces.